What is claimed is:

1. A method for manufacturing an optical waveguide device, the method comprising:

disposing a plurality of optical waveguides on a first substrate in a matrix, each of the plurality of optical waveguides comprising a core having a selected number of branch points N for propagating light, and a cladding layer surrounding the core, wherein each length of sides of each grid in the matrix being X and Y, and a length of the core extending in the X direction being Z;

disposing a plurality of functional portions on a second substrate;

joining the first substrate and the second substrate together so that each of the plurality of optical waveguides opposes to a respective one of the functional portions;

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forming a plurality of grooves at each of the branch points, the distance between the grooves being P and ~~the~~ an angle of each of the grooves being θ ($0°<\theta<90°$), such that the following formulas are satisfied:

$X=M\cdot P/\sin\theta$ (where M is natural number)

$Y=P/\cos\theta$

$Z\leq(N+1)\cdot P/\sin\theta$; and

dividing the joined first and second substrate to a respective optical waveguide device.

5 2. A method for manufacturing an optical waveguide, the method comprising:

disposing a plurality of optical waveguides on a first substrate in a matrix, each of the plurality of optical waveguides comprising a core having a selected number of branch points N for propagating light, and a cladding layer surrounding the core,

wherein each length of sides of each grid in the matrix being X and Y, and a length of the core extending in the X direction being Z;

forming a plurality of grooves at each of the branch points, the distance between the grooves being P and ~~the~~ an angle of each of the grooves being θ (0°<θ<90°), such that the following formulas are satisfied:

$X=N\cdot P/\sin\theta$

$Y=P/\cos\theta$; and

dividing the first substrate to a respective optical waveguide.

2 ~~3.~~ An optical waveguide device manufactured by the method for manufacturing the optical waveguide device according to claim 1.

6 ~~4.~~ An optical waveguide manufactured by the method for manufacturing the optical waveguide according to claim ~~2.~~ 5

3 ~~5.~~ An optical communication apparatus comprising:

the optical waveguide device according to claim ~~3,~~ 2 wherein the optical waveguide device having a light emitting device and a light receiving device;

a light emitting device drive circuit for driving the light emitting device; and

a data processing circuit for processing a signal output from the light receiving device.

4 ~~6.~~ The method according to claim 1, further comprising inserting a plurality of optical filters in the plurality of grooves respectively.

7. The method according to claim 5, further comprising inserting a plurality of optical filters in the plurality of grooves respectively.